



2010 Army Corrosion Summit

US Army Training and Doctrine Command

“Corrosion Prevention and Control in the Army Warfighting Capability Development Process”

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Sustainment Center of Excellence

Supporting a Campaign Quality Army with Joint and Expeditionary Log Capabilities

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CASCOM and SCoE Mission and Vision



Mission

CASCOM and SCoE provides **Training** and **Leader Development**, and develops **concepts**, **doctrine**, **organizations**, **life-long learning**, and **materiel solutions**, to provide Sustainment to a campaign quality Army with joint and expeditionary capabilities.

Vision

Support Starts Here! **CASCOM and SCoE** is a world-class training and capabilities development organization transforming to a **Sustainment Center of Excellence**, shaping the Army's Sustainment capabilities to meet the needs of a Nation at war, while anticipating solutions to tomorrow's requirements.

Ties to Corrosion Prevention and Control...

Warfighting Capability Development Process – Defining and Assessing Sustainment Requirements (Materiel Availability), ownership costs and reliability.

Training - How we train our Soldiers and Soldier Maintainers on Corrosion Deterrence and Mitigation



Why is Corrosion Prevention and Control Important to the Army and DoD?

Corrosion Costs – Prevention and Correction

- ❖ Ground Combat systems estimated at \$2B in 2005/6
- ❖ Aviation and Missile systems is estimated at \$1.6B in 2006/7



Corrosion Impacts Readiness

- ❖ Ground, Missile and Aviation readiness degraded due to maintenance of corrosion-related faults



Corrosion Impacts Safety:

- ❖ Aircraft and missile mishaps due to corroded assemblies and sub-assemblies
- ❖ Ground vehicle failures due to corrosion and corroded parts





Common DoD and Industry Approaches to Corrosion Prevention and Control



- ❖ Monitoring and Visual Inspection
- ❖ “Chip and Paint” – restorative measures
- ❖ Adding Protective Coatings/Corrosion inhibitors
- ❖ Dehumidified Storage and Shelters
- ❖ Add on Covers
- ❖ Fresh Water Washdowns



“How do we influence system materiel design to fix the underlying problem and move away from prevention and control?”



Corrosion Prevention and Control In the Capability Development Process



❖ What we typically see as a Corrosion Prevention and Control requirement in system capability documents . . .

“Corrosion Prevention and Control . . . is a critical consideration in assuring the sustained performance, readiness, economical operation and service life of Army systems and equipment. It requires active consideration in the materiel development, acquisition, fielding, operation and storage processes. Corrosion Prevention and Control requires life cycle management planning and action in design, development, testing, fielding, training and maintenance. The PM is responsible for ensuring that a suitable corrosion prevention strategy is in place in accordance with AR 750-59, Army Corrosion Prevention and Control Program.”

❖ In most cases a direct lift from the Army Regulation requiring the Materiel Developer (Program Manager) to institute a corrosion prevention strategy

❑ Challenges:

- ✓ How do we make the requirement **measurable**? Are the controls in place that result in a corrosion free system over its life cycle?
- ✓ How do we make the requirement **testable**? What is the criteria to determine if the system meets the requirement over its life cycle?
- ✓ Is the requirement **achievable**? What is the gauge to determine if the requirement is being met?
- ✓ Is the solution **affordable**? Can the Army afford a holistic approach at the system level to corrosion prevention and control?



Approaches to Corrosion Prevention and Control As A System Attribute



- ❖ Define the requirement parameters early in the capability development process – key to communicating desired outcomes to materiel developers and industry partners
- ❖ Identify the Corrosion inducing factors we need to target in the requirement
- ❖ Identify the components and sub-systems that are incur a high corrosion rate
- ❖ Measurement Controls
- ❖ Defining Test Parameters
- ❖ Affordability



Where Do We Go From Here...

- ❖ **Defining and integrating Corrosion and Prevention Control requirements into capability documents is a start point**
- ❖ **Government – Industry partnering is essential to realizing the goals and objectives established by DoD**
- ❖ **Community consensus is needed to shape requirements that are measurable, testable, achievable and affordable**
- ❖ **In the end state, we all have the same objectives...**
 - ✓ **Improve system safety**
 - ✓ **Procure systems that last longer at lower costs**
 - ✓ **Reduce the training and maintenance burden due to corrosion**



My Command POC



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Questions?



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